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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,994	08/02/2001	Rui Xie	D-6400 CIP	8016

7590 10/26/2010  
Crompton Corporation  
Benson Road  
Middlebury, CT 06749

EXAMINER
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SERGEANT, RABON A

ART UNIT	PAPER NUMBER
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1765

MAIL DATE	DELIVERY MODE
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10/26/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/919,994	XIE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rabon Sergeant	1765	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 46 and 48-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 46 and 48-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. Claims 46 and 48-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Firstly, applicants' independent claim 46 is drawn to a process that consists of distilling diphenylmethane diisocyanate monomer from a combination consisting of a polyurethane prepolymer product mixture and one or more inert solvent. With this in mind, applicants' claims are indefinite, because it is unclear that the "consists of" language closes the claims to the inclusion of additional elements and process steps, in view of the subsequent "comprises" and "comprising" language set forth within claims 46 and 51-53. The use of this "open" claim language subsequent to the use of the "closed" claim language creates confusion and ambiguity as to what function the "closed" language performs and what limitations are within the scope of the claims.

Secondly, it is unclear if the pressure limitation of claim 46 pertains to the step of distilling or the boiling point property. If the former is the case, then it is questioned where support exists for the limitation.

Applicants' response has not addressed these issues.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 46 and 48-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenberg et al. ('193).

Patentees disclose the removal of isocyanate monomers from isocyanate prepolymers, wherein solvents, which have boiling point properties that meet those of applicants' solvents, are added to the prepolymer reaction components at the start of or during prepolymer synthesis. The resulting solvent containing prepolymers are then subjected to distillation to obtain products having reduced levels of isocyanate monomers. Furthermore, the reference discloses that MDI is a suitable diisocyanate for the process. See abstract and columns 2-6, especially column 6, lines 13+. Furthermore, applicants' claimed polyols are met by the disclosure at column 4, line 40 through column 5, line 30. The use of two or more distillation units in series is disclosed at column 2, lines 51 and 52.

4. Applicants have argued that the instant claims specify that the distillation mixture consists only of the identified inert solvent, the products, and by-products formed when MDI is reacted with a diol, any left over starting materials of the reaction, and excludes any solvent with a boiling point higher than the diisocyanate, as required by Rosenberg et al. In response, the examiner disagrees that the claims are limited as argued. The claimed polyurethane prepolymer product mixture, itself, may contain the argued higher boiling point solvent, because there is no language that definitively excludes such a component from the polyurethane prepolymer product mixture, and it is noted that the reference clearly states that the solvent components may be present at the start of prepolymer formation; therefore, the reference discloses a polyurethane prepolymer product mixture that may contain the argued higher boiling point solvent. The "consisting of" language does not serve to limit the content of the "polyurethane prepolymer product mixture" in any way. Furthermore, it is not seen that new claim 54 excludes the argued solvent, because the claimed inert solvent may be a component of a solvent mixture, which

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further includes the argued higher boiling point solvent. It is by no means clear that the use of "is" within line 3 of claim 54 should be equated to the use of the accepted closed transitional language, "consisting of".

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

/Rabon Sergent/  
Primary Examiner, Art Unit 1765